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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,009	01/11/2002	Susan A. Alie	Analog 5911	8144

7590

09/25/2002

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EXAMINER

LE, THAO X

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 09/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,009

Applicant(s)

ALIE ET AL.

Examiner

Thao X Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 9-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I claim 1-8 in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

✓ Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recited '...electrically conductive structure is a conventional interconnect...' is unclear.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

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various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6388789 to Bernstein et al.

Regarding to claim 1, Bernstein discloses a metallization stack in an integrated MEMS device in fig. 9F comprising: a titanium-tungsten layer 340, column 16 line 50, that operatively contacts an electrically conductive structure in the integrated MEMS device, a conductive layer 345, column 17 line 4.

But Bernstein does not expressly disclose the conductive layer comprises platinum.

However, Bernstein discloses the suitable metal including gold and platinum, column 7 line 39. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to use the platinum the teaching of Bernstein to replace gold, because such material substitution would have been considered a mere substitution of art-recognized equivalent values.

4. Claims 1, 5, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5358826 to Steitz et al.

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Regarding to claims 1, Steitz discloses a metallization stack in an integrated device fig. 12 comprising: a titanium-tungsten layer 20c, column 4 line 15, that operatively contacts an electrically conductive in the integrated device, a platinum layer 20a formed over the titanium-tungsten layer.

But, Steitz does not expressly disclose the metallization stack in an integrated MEMS device.

With respect to MEMS device, it would have been obvious to use the metallization stack teaching of Steitz in a device for an intended use.

5. Regarding to claims 5, 6 and 8, Steitz does not expressly disclose the metallization stack in the optical MEMS, Bio-MEMS device. However, at the time of the invention was made it would have been obvious to use the metallization stack teaching of Steitz in a device for intended use.

Regarding to claim 7, Steitz discloses the metallization stack wherein the platinum layer 20a forms a corrosive resistant electrode.

6. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3923559 to Sinha in view of US 5358826 to Steitz et al.

Regarding to claims 1, 2, Sinha discloses a metallization stack in an integrated device fig. 1.3 comprising: a titanium-nitride layer 20 (triple layer of Ti/TiN/Pt), column 4 lines 66-68 and column 5 lines 2-5, that operatively contacts an electrically conductive in the integrated device, a platinum layer 20 formed over the titanium-nitride layer.

But, Sinha does not expressly disclose the metallization stack in an integrated MEMS device, and the titanium tungsten layer.

However, Steitz discloses a metallization stack in fig. 12 a platinum layer 20a over titanium tungsten layer 20c, column 4 line15. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to substitute the titanium nitride barrier layer 20 of Sinha with titanium tungsten barrier 20c teaching of Steitz, because such substitution would have been considered a mere substitution of art-recognized equivalent values.

With respect to MEMS device, it would have been obvious to use the metallization stack teaching of Sinha in a device for an intended use.

Regarding to claim 3, Sinha discloses the metallization stack wherein the titanium nitride layer 20 contacts the active silicon element via a platinum silicide layer 18, fig. 1.3, formed on the semiconductor substrate 10, the semiconductor substrate has an insulating film 16 formed thereon, the insulating film has a contact hole 15 formed therein, the contact hole exposes a portion of the surface of the semiconductor substrate at the bottom of the contact hole, fig. 1.1, and the platinum silicide 18 is formed only on the exposed portion of the surface of the semiconductor substrate.

But, Sinha does not expressly disclose the titanium tungsten layer contacts the active silicon element.

However, Steitz discloses a metallization stack in fig. 12 a titanium tungsten layer 20c can be used instead of titanium nitride, column 4 line14. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to substitute the titanium nitride barrier layer 20 of Sinha with titanium tungsten barrier 20c teaching of

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Steitz, because such substitution would have been considered a mere substitution of art-recognized equivalent values.

Regarding to claim 4, Sinha discloses the metallization stack wherein the platinum layer 20 is a portion of platinum wiring formed on the insulating film 16.

Regarding to claims 5, 6 and 8, Sinha does not expressly disclose the metallization stack in the optical MEMS, Bio-MEMS device. However, at the time of the invention was made it would have been obvious to use the metallization stack teaching of Sinha in a device for intended use.

Regarding to claim 7, Sinha discloses the metallization stack wherein the platinum layer forms a corrosive resistant electrode.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US 6096629
- b. US 6140646
- c. US 5021840
- d. US 6423598
- e. US 4816879
- f. US 6232150
- g. US 6300662
- h. US 6121122


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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is 703-306-0208. The examiner can normally be reached on M-T from 7:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Thao X. Le
September 23, 2002


PHAT X. CAO
PRIMARY EXAMINER